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ABSTRACT

Increasing access to higher education for first-generation and low-income students was the primary motivation for the establishment of the federally funded TRIP programs. This study, using data from the National Survey of Student Engagement (NSSE) obtained through data sharing among several urban institutions, compared TRIO-eligible students and non-TRIO eligible students on their engagement in three effective educational practices: active learning, student-faculty interaction, and student-peer interaction. Also compared were student self-reported gains on measures of cognitive and affective development. Findings suggest that for both sample populations, engagement in educational practices was positively related to their cognitive and affective growth during college. Results also indicate that the relative importance of these effective educational practices to student outcomes varied somewhat for students in the two sampled populations. Findings show that low-income, first-generation students tend to benefit more from educational practices that involve them in class presentations or participation in class discussions and from activities that engage them in a collaborative learning process. One appendix lists institutions involved in the data share, and the other describes the beneficial educational practices. (Contains 6 tables and 22 references.) (SLD)

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First Generation and Low Income Students: Using the NSSE Data to Study Effective Educational Practices and Students' Self-Reported Gains

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Abstract

Increasing access to higher education for first-generation and low-income students was the primary motivation for the establishment of the federally-funded TRIO programs. In this study, using NSSE data obtained through a data-sharing among several urban institutions, we describe and compare TRIO-eligible students to non-TRIO-eligible students on their engagement in the three effective educational practices (active learning, student-faculty interactions, and student-peer interactions), as well as their self-reported gains on measures of cognitive and affective development. The implications of these findings for institutions that cater to these populations of students or have TRIO programs in place on campus will be discussed.

First Generation and Low Income Students: Using the NSSE Data to Study Effective Educational Practices and Students' Self-Reported Gains

First generation students are becoming an increasingly important segment of the student population for many institutions, yet Terenzini et al. (1996) report that relatively little research has been done on this constituency. What is known is that first generation students are at a disadvantage in terms of college knowledge, personal commitment and familial support (York-Anderson and Bowman, 1991); have cultural and family influences adding to the typical college-student anxieties (London, 1989; Terenzini et al., 1994); and are described as being at greater risk with respect to both persistence and degree attainment (Billson and Terry, 1982; Richardson and Skinner, 1992). Terenzini et al. (1996) found in their research that first-generation students tend to have weaker cognitive skills, have lower degree aspirations, expect to take longer to complete their degree programs, and report receiving less encouragement from family than their traditional peers.

A small, but growing body of research has focused on first-generation students' experiences during college and the effect these experiences have on their learning and development. Grayson (1997) reports that first-generation students differ from their traditional peers in the types of activities they engage in as well in their level of academic achievement. Findings from his study indicate that while first-generation students participated less in activities that contributed to their GPA, such as classroom involvement and time on task, they also engaged less in activities that detracted from the GPA, such as involvement in social activities. First-generation students in this study were also found to have lower first-year GPA's than their traditional counterparts.

Terenzini et al. (1996) examined the educational experiences of both first-generation students and traditional students to determine if there were differential influences on the gains students made in three important outcomes of an undergraduate education: math skills, reading comprehension, and critical thinking skills. They found that while students' experiences had a significant effect on gains for all students, first-generation students tended to benefit more from their classroom involvement than did traditional students. Kuh et al (19960) report similar findings in their investigation of the influence of certain measures of educational practices (active, collaborative learning and student-faculty interaction) on students' gains on two college outcomes: general education and cognitive development. While the best predictor of gains in these two areas for all students was their involvement in active and collaborative learning activities, they found that students' socio-economic status was negatively correlated with these activities, suggesting that students with low SES were more likely to engage in and benefit from involvement in such practices.

Cabrera, La Nasa and Burkum (2001) looked at the pathways to the 4-year degree, likelihood of transfer, and degree-completion rates of students in different socioeconomic strata. They found that low SES students tended to come from backgrounds of moderate to poor academic preparation, tend to enter first at a community college (with only 17% eventually transferring to a 4-year institution), and have the lowest degree completion rates. Terenzini, Cabrera and Bernal (2001) report on a variety of factors handicapping the degree completion of low-income students, including part-time enrollment, delayed enrollment after high school, and parental responsibilities.

These concerns prompted the federal government to get involved in helping increase access to higher education for these students. Funded under Title IV of the Higher Education Act of 1965, the TRIO programs (so named because initially there were three programs) were designed to help first-generation, low-income students overcome class, social and cultural barriers to higher education. According to the Department of Education website, over 1,900 TRIO programs currently serve nearly 700,000 low-income Americans (annual incomes less than $25,000) between the ages of 11 and 27 through several programs, including Upward Bound, Student Support Services, and McNair Post-Baccalaureate Achievement programs.

The purpose of this study is to describe and compare TRIO-eligible students to non-TRIO-eligible students on their engagement in the three effective educational practices as identified, as well as their self-reported gains on measure of cognitive and affective development. Furthermore, within the domain of TRIO-eligible students, a comparison of those participating in TRIO programs to those not participating in such programs will be made on these same measures.

Method

The data for these analyses came from the 2001 administration of the National Survey of Student Engagement (NSSE). Created under the auspices of the Pew Charitable Trust, the NSSE was designed to assess the extent to which students are exposed to, and engage in, good educational practices (Kuh, 2001a). Among the variety of items on the survey, students were asked to report the frequency with which they engage in a number of activities that represent good educational practices, indicate the amount of time spent on various activities, and estimate their educational and personal

growth across a number of domains (Kuh, 2001b). Also, students were asked to estimate their household income (or that of their parents if they were claimed as a dependent) and the educational attainments of their parents. It was these items, along with demographic information, that were the variables of primary interest for this study.

Coordinated through Indiana University's Center for Survey Research, the 2001 administration of the NSSE involved over 300 four-year colleges and universities and over 175,000 first-year and senior students. To provide institutions better data for inter-institutional comparisons, participating schools were invited to form consortia based on a variety of criteria, including geographic location, institution type, or mission. The data for this study came from institutions belonging to the urban university consortium. These eleven urban institutions were invited to participate in a data share, and overall, six institutions provided their data, resulting in a dataset comprised of 1,910 respondents (Appendix A lists the institutions who provided their data). Of these respondents, 909 (47.6%) listed themselves as first generation and 537 (28.1%) reported themselves as low income[1].

Measures of Good Practice and Estimates of Gains

Kuh, Pace, and Vesper (1997), citing analyses done by Pace (1990), investigated student gains along three dimensions (General Education, Personal and Social Development, and Intellectual Skills). Furthermore, they created three categories of good practice indicators (Faculty-Student Contacts, Cooperation Among Students, and Active Learning) based on the principles of good practice described by Chickering and Gamson (1987). By regressing the estimated gains onto the indicators of good practice,

[1] Low income was defined as less than $25,000 per year household income, as per the federal rules for Title IV recipient status.

they were able to empirically demonstrate the importance of these good practices on student intellectual and personal growth, particularly for students from different institution types (baccalaureate versus masters versus doctoral-granting) and across gender. A similar approach was taken here to create measures of good practice and gains using the 2001 NSSE data from the urban universities and regress the gains onto the good practice measures, comparing first-generation and low income students (TRIO eligible) to the rest of the sample (non TRIO eligible).

In the first section of the NSSE, students were asked to report the frequency with which they engaged in twenty activities related to good educational practice. These twenty college activity items were subjected to a principal components factor analysis using varimax rotation. Five factors emerged, three of which corresponded to the three categories of good practice used by Kuh, Pace and Vesper (1997). However, the alpha reliabilities were acceptable for only one of these three (Faculty-Student Interaction). Therefore, the items corresponding to Active Learning and Student Collaboration were combined to create a single scale referred to here as Active and Collaborative Learning, as developed through the National Study of Student Engagement (NSSE) to represent one of five national benchmarks of effective educational practice (Kuh, 2000). Appendix B lists the items that correspond to each of these indicators and section A of Table 1 shows the psychometric properties for these scales. The indices for the final analyses were created by summing across the corresponding items for each scale and these scales became the primary predictors of interest in subsequent analyses.

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Insert Table 1 about here

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A subsequent section of the NSSE had respondents estimating the degree to which their experiences at their institution contributed to their knowledge, skills and personal development. These 14 items were also subjected to a principal components factor analysis using varimax rotation. Two factors emerged, a personal development factor and an academic development factor. Since the academic development factor appeared on its face to tap different constructs, the factor analysis was re-run with three factors being forced to emerge. These three factors correspond to development in general education, vocational and workplace skills, and personal/social development. The alpha reliabilities for each of these were very acceptable so these three scales were retained to serve as our dependent measures in subsequent analyses. Appendix B lists the items corresponding to each gains measure and section B of Table 1 provides the psychometric properties for each scale. Gains scores used in the final analyses were created by summing across the corresponding items.

Control and Background Measures

The primary purpose of this study was to assess the impact of good educational practices on the educational and personal development of first-generation and low-income students (TRIO eligible students). However, there are several other factors not necessarily associated with good education practices for which the analyses needed to

account. These control variables are listed in Table 2, with descriptions and percentage distributions in the dataset.

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Insert Table 2 about here

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Most are self-explanatory with the exception of the external commitment measure which was intended to indicate whether or not a student had other commitments outside of school that would keep him/her from taking full advantage of the college experience. Another section of the NSSE has students indicate how much time they spend on various activities in a typical week. Two of these activities were working off campus and providing care for dependents. If a student indicated spending 20 or more hours on either of these activities, he/she was coded as having "high" external commitments.

Also considered for their possible impact on student gains was the academic and social support perceived to be provided by the institution. The NSSE has students rate the degree to which they felt their institution provides support for them to succeed academically and thrive socially. These ratings were considered as background variables in the analyses as student perceptions of institutional support have been statistically related to student academic and social gains (Kuh, Pace and Vesper, 1997).

Models and Analyses

Using ordinary least squares (OLS) regression, seven linear models were estimated for each of the three gains scores (21 models in total). The seven models were

an overall model, one model for each of the 4 groups of respondents of interest (first generation and not first generation; low income and not low income) and one model for TRIO eligible students (first generation and low income) and one for non-TRIO eligible students. The three gains scores were regressed onto the control measures and the indicators of good performance in a three-step process. During the first step, all of the control measures were entered into the equation, and in step 2, the institutional support background measures were entered. These first two steps are important as they remove the variance in gains attributable to these variables before considering the impact of the indicators of good performance that were entered during step 3. Therefore, one indicator of the effectiveness of good practice behaviors on student development was the change in variance accounted for (R^2) through the various steps. The relative impact of each measure of good practice was assessed through investigation of the individual beta weights.

Results

Tables 3-6 present the results of the regression analyses; Tables 3, 4 and 5 showing the results for the overall models for the main variables of interest (first generation status and income status) for the three gains scores (General Education, Vocational and Workplace Skills and Personal and Social Development, respectively). Table 6 provides the TRIO eligibility comparisons across the three gains scores. For all models, the measures of overall fit (adjusted *R2*s) were modest, explaining from 23% to 34% of the variance in gains scores. Across most models, the control items contributed little to the explained variation, the percentages ranging from 0% to 8,1% with all the models, except for those associated with Vocational and Workplace Skills, typically

showing the contribution of these factors at below 4%. The largest increases in adjusted *R2*s occurred when the institutional support measures were included. However, the addition of the good practice measures did significantly increase the variance ($p < .001$) across all models, although this increase ranged from as little as 4.4% to as much as 11.9% of the variation explained.

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Insert Tables 3-6 about here

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General Education

Looking at the models for the specific gains, first for General Education (Table 3), Active and Collaborative Learning appears the more effective good practice by virtue of the higher beta weight, although Faculty-Student Interaction was also a significant predictor. These good practices and receiving academic support from the institution were the strongest predictors of gains in general education (each beta, $p < .001$). The models for all the various groups accounted for approximately the same amount of variance, between 25% and 27%. When comparing TRIO eligible students (first generation and low income) to non-eligible students (Table 6), these patterns change little. There is a slightly better fit to the model for the non-eligible students, perhaps due to the larger n. It would appear also that Active and Collaborative Learning takes on a more important role for TRIO eligible students. Also, the academic support provided by the institution seems to have more impact for TRIO eligible students.

Vocational and Workplace Skills

The models for Vocational and Workplace skills (Table 4) tended to show the best fit for all the gains, with adjusted *R2*s indicating the range of variation explained from 28% to 34%. Active and Collaborative Learning was a significant predictor of gains in these skills, while Faculty-Student Interaction was not for most of the models. Also, both types of institutional support (academic and social) were significant predictors of gains made. It also appears that Active and Collaborative learning has more impact for first generation students (compared to non first generation students) and for low income students (compared to non low income students), as evidenced by the differences in the beta weights. This effect appears magnified for TRIO eligible students (Table 6), which is logical given that these students are first generation and low income. The level of institutional academic support appears more important to the non TRIO eligible students.

Personal and Social Development

The models for Personal and Social Development (Table 5) showed something of a reversal of the trends shown in the other models. Again, these models showed a modest fit, with adjusted *R2*s showing approximately 32% of the variation being explained. One reversal comes from the relative importance of institutional support, with social support now being the stronger predictor of gains in this area. Also, we see Faculty-Student Interactions becoming more important for gains in Personal and Social development in these models. We see Faculty-Student Interactions being stronger predictors for first-generations students compared to non first-generation students and for low income students compared to non low income students. Alternatively, Active and Collaborative Learning was a more important predictors for non first generation students and for non

low income students. We see this same trend evidenced from the comparisons of TRIO eligible students to non TRIO eligible students (Table 6).

Discussion

The purpose of this study was to assess the impact of effective educational practices on student outcomes for two sample populations at selected urban institutions belonging to the NSSE urban institution consortium. The populations consisted of TRIO-eligible students (low income, first generation) and non-TRIO eligible students. In this study, the scope of effective educational practices are limited to students' interactions of an intellectual or educational nature that take place with faculty members and other students. In summarizing the research on the impact of student interactions with peers on student learning and development, Terenzini et al. (1996) note that students benefit when they are involved with other students in activities in which the focus is of an academic nature. Similarly, research suggests that the frequency and nature of student-faculty interactions have the greatest impact when they focus on topics that engage students on an intellectual level in contrast to an exclusively social level. Consistent with this research, the findings from this study suggest that for both sample populations, their engagement in such educational practices (i.e., involvement in active/collaborative learning activities and interacting with faculty) was positively related to their cognitive and affective growth during college. Results also indicate that the relative importance of these effective educational practices to student outcomes varied somewhat for students in the two sample populations. Consistent with Kuh et al.'s findings (1997), our findings suggest that low income, first generation students tend to benefit more from educational practices that involve them in activities such as class presentations or participation in

class discussions, as well as activities that engage them in a collaborative learning process. Additionally, we found that the benefits that accrue to students from their interacts with faculty were also more pronounced for these students as compared with their non-TRIO eligible peers. These results of this study reinforce this notion and provide further evidence of the influence that active student involvement with faculty can have on the different facets of students' personal growth.

Although not of primary interest to this study, students' perceptions of a campus environment that is supportive of their academic and non-academic efforts were found to have the greatest influence on students' gains across the three outcomes, exceeding all other variables (note: one exception was found in gains in vocational and workplace skills for TRIO students). As one of the five indicators of effective educational practices (NSSE 2000 Report, 2000), a supportive campus environment has been found to be an important facilitating condition to student learning and personal development (Pace, 1990; Kuh, 1997). These results generally confirm the important contribution that such an institution's environment can make to the gains that students make across a range of outcomes. That is, when students perceive their institution's environment to be supportive of their intellectual efforts, they are more likely to exhibit gains in the appropriate areas (e.g., *thinking critically and analytically, writing clearly and effectively; analyzing quantitative problems; learning effectively on your own*). A similar relationship exists with students who perceive an environment supportive of their personal development and the gains they report (e.g., *working effectively with others; understanding yourself; developing a personal code of values and ethics*).

These findings have important implications for institutions that are firmly committed to providing a quality undergraduate education for students from low-income families who are the first in their family to attend college. These students, for whom the path to college has been characterized as hazardous (Cabrera and La Nasa, 2001), the creation of a campus environment that supports optimal student learning and development can serve to mitigate some of the pre-college risk factors that they bring to college. Additionally, once in college, these students have been found to encounter other challenges to negatively impact their academic success such as lower levels of academic and social integration (Billson and Terry, 1982) and less positive out-of-class experiences than traditional students (Terenzini et al. (1996). With students' academic success as a goal, institutional policies and practices must ensure that students engage more frequently in the types of behaviors that will lead to their increased learning and personal development.

Limitations of Study

This study has several limitations. First, although the study is multi-institutional, the student sample is drawn from urban institutions participating in the NSEE 2000 survey; further studies are needed to assess the generalizability of these findings for students at other types of colleges and universities. Second, although we were able to assess the impact of perceived institutional academic support, the study did not include a measure of students' ability. It is possible that with the inclusion of such measures, the findings might differ as to impact of good educational practices. Finally, the data necessitated the use of unequal sample sizes among the different models generated. To equalize the sample sizes across the different cells in the design would have resulted in

too small a number of cases for drawing meaningful conclusions. Future studies will seek to rectify these limitations and provide a more complete picture of the impact of good educational practices on this growing and increasingly important segment of the higher education student population.

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Appendix A

Institutions Included in the Data Share

DePaul University

Northeastern Illinois University

Portland State University

Southern Illinois University Edwardsville

University of Missouri - St Louis

University of North Carolina Charlotte

Appendix B

Active and Collaborative Learning

- Asked questions in class or contributed to class discussions
- Made a class presentation
- Worked with other students on projects during class
- Worked with classmates outside of class to prepare class assignments
- Tutored or taught other students
- Participated in a community-based project as part of a regular course
- Discussed ideas from readings with others outside of class
- Had serious conversations with students of a different race
- Had serious conversations with students who differ from you in terms of their religious beliefs, political opinions, or personal values.

Faculty-Student Interactions

- Discussed grades or assignments with an instructor
- Talked about career plans with a faculty member or advisor
- Discussed ideas from your readings or classes with faculty members outside of class
- Received prompt feedback from faculty on your academic performance (written or oral)
- Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)

General Education

- Acquiring a broad general education
- Writing clearly and effectively
- Speaking clearly and effectively
- Thinking critically and analytically

Vocational and Workplace Skills

- Acquiring job or work-related knowledge and skills
- Analyzing quantitative problems
- Using computing and information technology
- Working effectively with others

Personal and Social Development

- Voting in local, state, or national elections
- Learning effectively on your own
- Understanding yourself
- Understanding people of other racial and ethnic backgrounds
- Developing a personal code of values and ethics
- Improving the welfare of your community

Table 1. Psychometric Properties of the Good Practice and Gains Measures

	Score Ranges
A. Indicators of Good Practice	
Faculty-Student Contact (5 items)	
Item-Total Correlations	.41 to .60
Interitem Correlations	.21 to .47
Reliability (alpha)	.73
Active and Collaborative Learning (9 items)	
Item-Total Correlations	.32 to .51
Interitem Correlations	.14 to .76
Reliability (alpha)	.74
B. Estimates of Gains	
General Education (4 items)	
Item-Total Correlations	.50 to .71
Interitem Correlations	.42 to .66
Reliability (alpha)	.81
Vocational and Workplace Skills (4 items)	
Item-Total Correlations	.48 to .53
Interitem Correlations	.35 to .45
Reliability (alpha)	.72
Personal and Social Development (6 items)	
Item-Total Correlations	.45 to .68
Interitem Correlations	.30 to .59
Reliability (alpha)	.82

Table 2. Control Factor Descriptions and Percentage Distributions

Control Factor	Codes	Distribution
Gender	0=Male; 1=Female	35.5% Male
Class Level	0=First Year; 1=Senior	42.6% First Year
Enrollment Status	0=Part-Time; 1=Full-Time	23.0% Part-Time
Entry Status	0=Native Freshman; 1=Transfer Student	57.3% Native Freshmen
External Commitments	0=Little Commitment; 1=Much Commitment	56.3% Little Commitment
Race	0=Minority; 1=Non-Minority	27.7% Minority

Table 3. Beta Weights for the Overall Models – General Education

Model:	Overall	First Gen	Not First Gen	Low Income	Not Low Income
N	1,910	909	847	537	1,164
Control Measures					
Gender	.006	.001	.011	-.024	.017
Class Level	.173c	.159c	.156c	.080	.188c
Enrollment Status	-.002	.030	-.037	.028	.007
Entry Status	-.097c	-.111b	-.068	-.089	-.096b
External Commitments	.020	.055	-.056	.073	.012
Race	-.046a	-.025	-.058	-.011	-.056a
Adjusted R^2	.031	.030	.023	.005	.045
Institutional Support Measures					
Institutional Academic Support	.290c	.297c	.257c	.313c	.277c
Institutional Social Support	.123c	.086a	.160c	.110a	.120c
Adjusted R^2	.221	.199	.219	.206	.221
Indicators of Good Practice					
Active and Collaborative Learning	.176c	.194c	.163c	.171c	.176c
Faculty-Student Interaction	.091c	.088a	.112b	.096	.094b
Adjusted R^2	.269	.253	.268	.254	.267

[a]p≤.05, [b]p≤.01, [c]p≤.001

Table 4. Beta Weights for the Overall Models – Vocational and Workplace Skills

Model:	Overall	First Gen	Not First Gen	Low Income	Not Low Income
N	1,910	909	847	537	1,164
Control Measures					
Gender	-.050a	-.048	-.066a	-.077	-.038
Class Level	.242c	.185c	.284c	.164c	.245c
Enrollment Status	.040	.054	.018	-.008	.067a
Entry Status	-.059a	-.050	-.064	-.081	-.040
External Commitments	.009	.024	-.037	.034	-.003
Race	-.065c	-.061a	-.063a	-.065	-.079b
Adjusted R^2	.063	.051	.066	.020	.081
Institutional Support Measures					
Institutional Academic Support	.244c	.241c	.244c	.226c	.242c
Institutional Social Support	.205c	.207c	.204c	.175c	.227c
Adjusted R^2	.275	.259	.278	.206	.296
Indicators of Good Practice					
Active and Collaborative Learning	.226c	.267c	.199c	.277c	.217c
Faculty-Student Interaction	.057a	.041	.068	.066	.038
Adjusted R^2	.333	.332	.327	.295	.344

[a]p≤.05, [b]p≤.01, [c]p≤.001

Table 5. Beta Weights for the Overall Models – Personal and Social Development

Model:	Overall	First Gen	Not First Gen	Low Income	Not Low Income
N	1,910	909	847	537	1,164
Control Measures					
Gender	.055b	.034	.090b	.017	.070b
Class Level	.099c	.099b	.062	.096	.083a
Enrollment Status	-.021	-.025	-.010	-.085a	.036
Entry Status	-.070b	-.095a	-.011	-.106a	-.050
External Commitments	-.017	.032	-.094b	-.046	.020
Race	-.076c	-.044	-.096c	-.041	-.089c
Adjusted R^2	.032	.024	.036	.017	.044
Institutional Support Measures					
Institutional Academic Support	.169c	.182c	.135c	.178c	.157c
Institutional Social Support	.298c	.293c	.305c	.294c	.303c
Adjusted R^2	.268	.258	.264	.267	.271
Indicators of Good Practice					
Active and Collaborative Learning	.138c	.123c	.173c	.115a	.159c
Faculty-Student Interaction	.141c	.149c	.137c	.177c	.125c
Adjusted R^2	.319	.306	.326	.322	.322

[a]p≤.05, [b]p≤.01, [c]p≤.001

Table 6. Beta Weights for the TRIO Eligibility Models

Gains:	General Education		Vocational Skills		Personal and Social Development	
Model:	TRIO Eligible	Not TRIO Eligible	TRIO Eligible	Not TRIO Eligible	TRIO Eligible	Not TRIO Eligible
N	305	1,315	305	1,315	305	1,315
Control Measures						
Gender	-.019	.000	-.033	-059[a]	.006	.071[b]
Class Level	.034	.174[c]	.110	.244[c]	.014	.087[b]
Enrollment Status	-.023	.020	-.097	.074[b]	-.137[b]	.027
Entry Status	-.032	-.109[c]	-.067	-.053	-.112	-.042
External Commitments	.067	.009	.032	-.005	-.002	-.011
Race	-.006	-.053	-.047	-.076[b]	-.049	-.080[b]
Adjusted R^2	-.015	.037	.006	.073	.030	.037
Institutional Support Measures						
Institutional Academic Support	.305[c]	.278[c]	.193[b]	.257[c]	.192[b]	.149[c]
Institutional Social Support	.058	.128[c]	.186[b]	.213[c]	.290[c]	.299[c]
Adjusted R^2	.149	.217	.156	.292	.264	.263
Indicators of Good Practice						
Active and Collaborative Learning	.197[b]	.166[c]	.352[c]	.211[c]	.115	.159[c]
Faculty-Student Interaction	.141	.082[a]	.023	.038	.169[a]	.133[c]
Adjusted R^2	.228	.257	.275	.338	.318	.316

[a]p≤.05, [b]p≤.01, [c]p≤.001

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